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Lie Detectors: Soviet Spy Case Revives Debate

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Special to The New York Times

WASHINGTON, Nov. 12 — The case of Vitaly S. Yurchenko, the purported Soviet defector who returned to his homeland last week in a blaze of publicity, has again raised the question of whether "lie detectors" can verify the truthfulness of a trained intelligence agent.

Some officials of the Reagan Administration have said that Mr. Yurchenko passed a battery of lie-detector tests when he first defected and additional tests during the course of his three months of interrogation by the Central Intelligence Agency.

That could mean that Mr. Yurchenko was telling the truth to his American interrogators, that he was a genuine defector who provided valid information to his interrogators and only later changed his mind.

But several leading experts on polygraphs, or lie-detectors, said in interviews this week that an intelligence agent can easily be trained to fool the polygraph examiners. One leading academic expert also asserted that the examiners for the C.I.A. are considered the least competent in the Federal Government, although another expert described them as "very good."

Thumbscrews 'Work Better'

Meanwhile, Sen. Patrick J. Leahy, Democrat of Vermont, the vice chairman of the Senate Select Committee on Intelligence, told the Women's Democratic National Club here today that lie detectors can be used as one investigative tool but that it is a mistake to rely on them too heavily. "It sure as heck didn't do much good in the Yurchenko case," he said. "I personally like thumbscrews. They work far, far better."

Defense Department polygraph experts contended in a report issued last year that the polygraph has proved "extremely useful in intelligence and counterintelligence operations" and has helped uncover many espionage attempts over the years.

A C.I.A. spokesman said the agency would not comment on whether polygraphs were used during the interrogation of Mr. Yurchenko and, if so, how they were used. A Pentagon spokesman said that polygraph experts in the Defense Department declined to comment on the value of polygraphs in such cases because they had played no part in the examination of Mr. Yurchenko.

The dispute over whether lie detectors can be used effectively in intelligence inquiries is part of a much broader debate about the value of lie detectors in interrogating a wide range of subjects, including suspects in criminal investigations, witnesses in legal proceedings and applicants for sensitive jobs. There is little consensus among the handful of experts in the field. Some say that lie detectors do little better than a coin flip at determining who is lying; others claim accuracy rates as high as 99 percent.

'Horror Stories' Ignored?

David T. Lykken, professor of psychology at the University of Minnesota, a strong critic of the tests, called such anecdotal evidence "essentially meaningless" because it emphasizes the success stories and ignores any "horror stories" where the polygraph may have failed. He said the polygraph may actually induce a "false sense of confidence" that allows some trained agents who pass it to operate undisturbed.

But experts on both sides of the debate agree that polygraph examinations of intelligence agents pose particular difficulties because the agents can be trained to fool the testers, and there is often very little independent evidence available to the testers to help verify whether the agent is answering truthfully.

"I'm a proponent of polygraph techniques," said David C. Raskin, professor of psychology at the University ot Utah, who has consulted for Federal agencies on lie-detector usage. "I think they're effective when used properly, especially in criminal cases. But when you talk of intelligence and national security, you're talking of a sophisticated group that can be given substantial training. A large proportion of people can be trained to beat the test in the laboratory."

The possibility that an agent can learn to "beat" the test arises from the nature of the polygraph machine and of the questions administered by the examiners.

Machine Can't Detect Lies

The machine does not literally detect lies. Instead, it measures such physiological changes as breathing, blood pressure and skin conduction caused by sweating that occur while an individual is being asked questions. The assumption is that when an individual lies his breathing quickens, his blood pressure rises and his fingers start to sweat. In short, he gives himself away with guilty reactions.

The examiner compares the individual's responses to the important questions with his response to irrelevant questions, or questions for which the answers are already known. If the physiological response to the important questions is greater, the examiner concludes that the subject was lying.

Dr. Raskin cited studies he conducted with two researchers indicating that, in laboratory experiments, many people can be trained to beat the tests. Individuals participating in the continuing studies were typically given a half hour of instruction in how to recognize the control questions and were advised to bite their tongues, or press their toes against the floor, or perform complicated mental tasks the minute the control questions were asked. That had the effect of increasing their physiological responses to the control questions, making it unlikely that any lies they told would evoke a greater response than the control questions did.

"A large proportion of these people, very close to 50 percent, were able to beat the test," Dr. Raskin said. He added that Federal polygraph examiners who consistently dismiss the likelihood that countermeasures can defeat the tests are "operating on faith and folklore" and exhibiting "Neanderthal attitudes."

Frustrating the Cheaters

There is some evidence that additional sensors might frustrate efforts to beat the tests, Dr. Raskin said. He noted that one study, conducted primarily by Charles R. Honts, a graduate student, found that electromyographic recorders attached near the jaw and calf muscles could detect 90 percent of those who bit their tongues or pressed their toes down to frustrate the polygraph. "So we took one step forward after two big steps backward," he said.

Experts outside the Government doubt that Federal polygraph examiners employ such additional sensors and some say that sensors would have difficulty picking up mental calculations or the contraction of hidden muscles.

Leonard Saxe, associate professor of psychology at Boston University, who was the principal author of a 1983 technical report on polygraph validity issued by the Congressional Office of Technology Assessment, said today that he was dubious about the accuracy of polygraphs in general. He said he "would be amazed if it were a useful technique" for interrogating a spy like Mr. Yurchenko, who could have been given extensive training in how to take the tests, including the use of biofeedback techniques to reduce the reaction to important questions or increase the reaction to control questions.

The extent of such training in the Soviet Union is not known, but American intelligence officials say that Americans who have spied for the Soviet Union have been given training in how to defeat the polygraph.

Gordon Barland, a polygraph consultant from Utah who has done research for both the Defense and Justice departments, said today that a wide range of countermeasures can be used in an effort to reduce reactions to the critical questions, including drugs, self-hypnosis and merely thinking relaxing thoughts, and that physical movements can boost reactions to the control questions. He called it "very hard to generalize about their effectiveness" because "there is not a lot of research in this area." But if Mr. Yurchenko were sent here on a premeditated mission, Dr. Barland said, then the Soviets "might have given him some tips that might help" defeat the examiners.

It has not been revealed who administered the polygraphs to Mr. Yurchenko, but if it was the C.I.A., opinions are mixed on the agency's competence. Dr. Raskin charged that the C.I.A.'s examiners have "an extremely bad reputation" among their colleagues in the Government and are probably "the least well trained" in the government because they attend their own school and not the Government's leading polygraph school. But Dr. Barland said he believes the C.I.A. examiners are "very good" and are "generally held in high regard" by other Federal agencies.

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